

SIGMA Compact

DN50-DN300

Description

The SIGMA Compact is an externally adjustable dynamic balancing valve that provides simple, accurate and reliable flow limitation and isolation in heating and cooling systems.

SIGMA Compact is offered in 2 series:

- The Ultra series has reduced size and weight to offer an easy installation.
- The Standard series has higher flows to cover a wider flow range.

Application

SIGMA Compact can be used in both heating and cooling systems for the effective distribution of flow in various sections of the system.

SIGMA Compact can be used instead of traditional double regulating valves and can be installed in both variable flow systems and constant flow systems.

Operation

SIGMA Compact can be set to the required position easily by using the scale, to limit the flow rate in certain parts of a system, eliminating overflows and the unnecessary wastage of energy. The internal differential pressure control function of the SIGMA Compact ensures that the set flow rate is limited irrespective of differential pressure fluctuations in the system.

The hand wheel can be used to close the valve and to open it to the preset flow.

Features

- Easy adjustment of the flow using the clear preset scale on the valve
- Hand wheel provides an isolation function up to 10 bar differential pressure
- No minimum straight pipe lengths required before or after the valve
- Built-in P/T plugs for needle system
- Size range: DN50 to DN300
- Flow range: 1,400 to 600,000 l/h
- Maximum differential pressure: 800 kPa



Benefits

- Easy to size and select as only the flow rate is required
- Simplified system design with the number of balancing valves being reduced
- Removes the requirement for main circuit or branch balancing valves in the system
- Works as a flow limiter ensuring no overflows
- Easy to install and adjust on site
- Provides flexibility if the system is modified after the initial installation
- Simplifies the commissioning process and reduces commissioning time due to automatic balancing of the system
- High level comfort for the end-users as a result of the correct balance of the hydraulic system
- Reliable operation as a dynamic balancing valve automatically finds the hydraulic balance regardless of pressure fluctuations in the system

SIGMA Compact DN50-DN300

Function

The SIGMA Compact reacts to pressure fluctuations in a system in order to keep the differential pressure across the pre-set unit constant. By achieving this, a maximum flow limit is ensured in accordance with the design.

The following applies to all flow control valves:

$$Q = kV * \sqrt{\Delta p}$$

Q = Flow (m³/h)

kV = Opening area

Δp = Differential pressure (Bar)

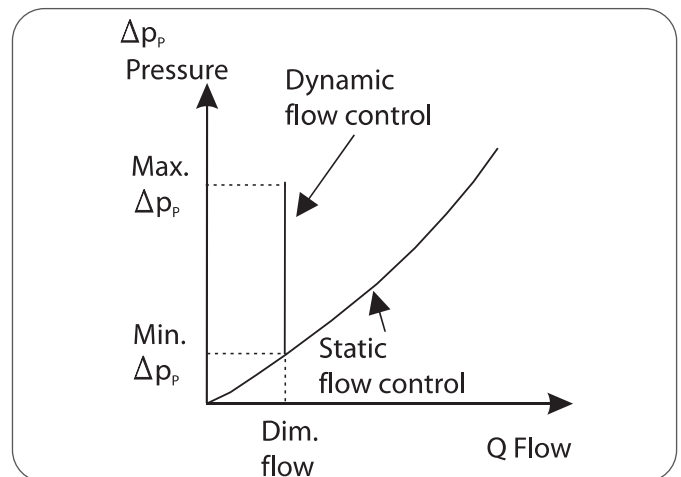
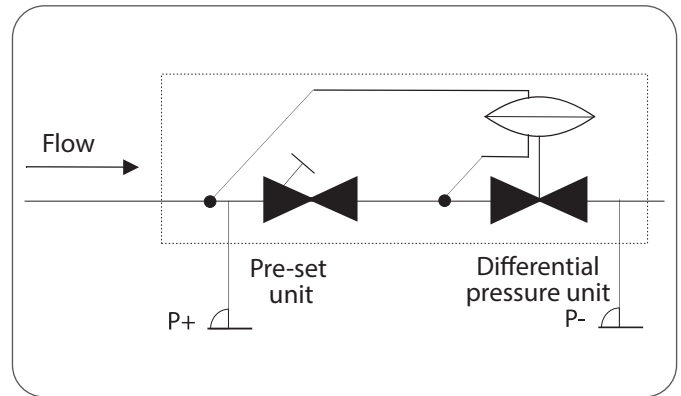
Flow Characteristic

The illustration shows how the flow in a SIGMA Compact valve reacts in accordance to the pump pressure. For comparison we have added a typical flow characteristic for a static balancing valve.

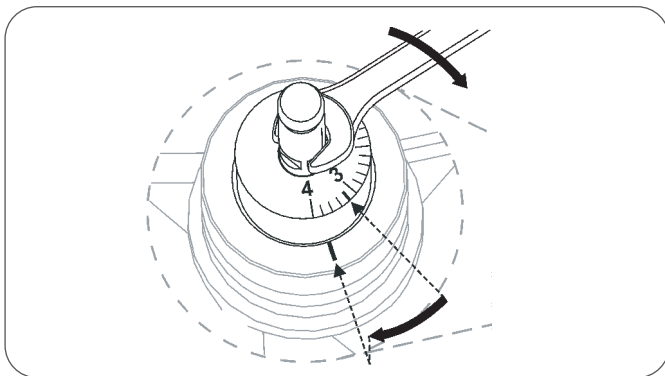
The differential pressure function of the valve will work when the differential pressure provided by the pump is sufficient to meet the required minimum differential pressure (which is dependent upon the required flow rate).

Once the minimum differential pressure is satisfied, the set flow rate is maintained regardless of any pressure fluctuations in the system.

Simplified Outline

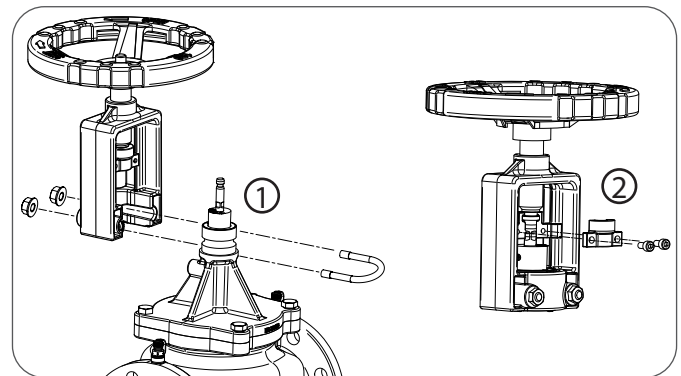


Setting the Valve and Mounting the Hand Wheel



The SIGMA Compact is easily set using the pre-setting scale.

The set point of the valve can be determined by using the flow graphs (page 9 to 17) or the Frese APP for the valve dimension in question.



After pre-setting of the flow, the hand wheel is mounted on the valve neck (1) and locked to the valve stem (2).

To use the valve for isolation, turn the hand wheel clockwise to the fully closed position.

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Verification of Dynamic Systems

In general the flow rate in a system can be verified in two ways:

- Direct flow rate verification in a circuit
- Measurement of the differential pressure across the balancing valve or metering station

Direct flow rate verification

This can for example, be carried out by ultrasonic equipment. On the basis of the measured velocity of the flow and the pipe dimension the software will compute a flow rate. The use of ultrasonic verification requires free access to the pipes as the sensors are fitted directly to the pipe.

Measurement of the differential pressure

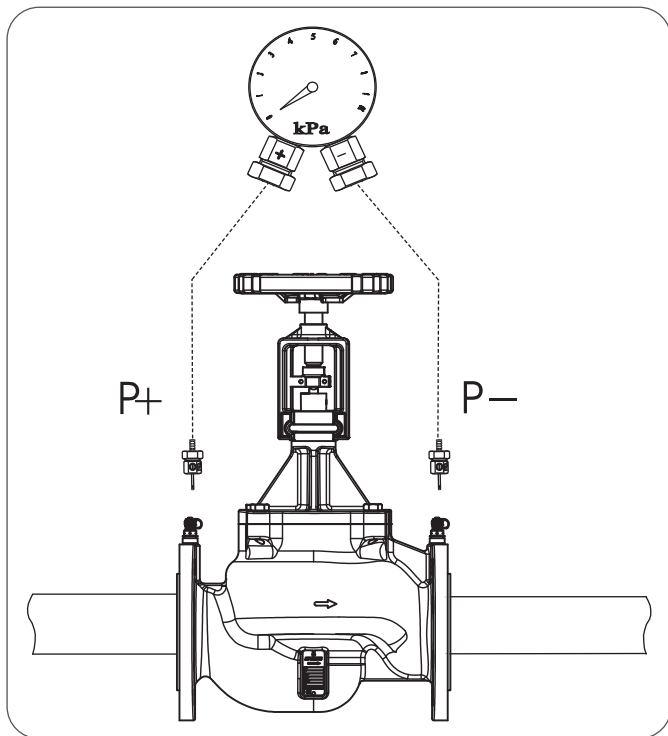
This is the main method of flow verification.

Once the design flow rate is known, the valve can be set using the flow graphs or Frese APP. Either of these tools will show the required set point and the required minimum differential pressure for the set flow rate.

The SIGMA Compact valve contains a differential pressure regulator, to limit and maintain the design flow limited under fluctuating pressure conditions.

Use the procedure as described for verification of the flow and for optimization of the operation.

Once the differential pressure has been verified, the flow rate can be recorded according to the flow rate graphs provided.



Measurement of the differential pressure (Δp) across the valve

Measurement of the differential pressure (Δp) across the valve

The flow through the valve can be identified by measuring the differential pressure (Δp) across the valve.

If the measured differential pressure is above the minimum Δp required for that set point, the flow can be read from the graph.

If the measured differential pressure is below the minimum Δp required for that set point, the flow can be found by using the formulas below.

Flow Calculation

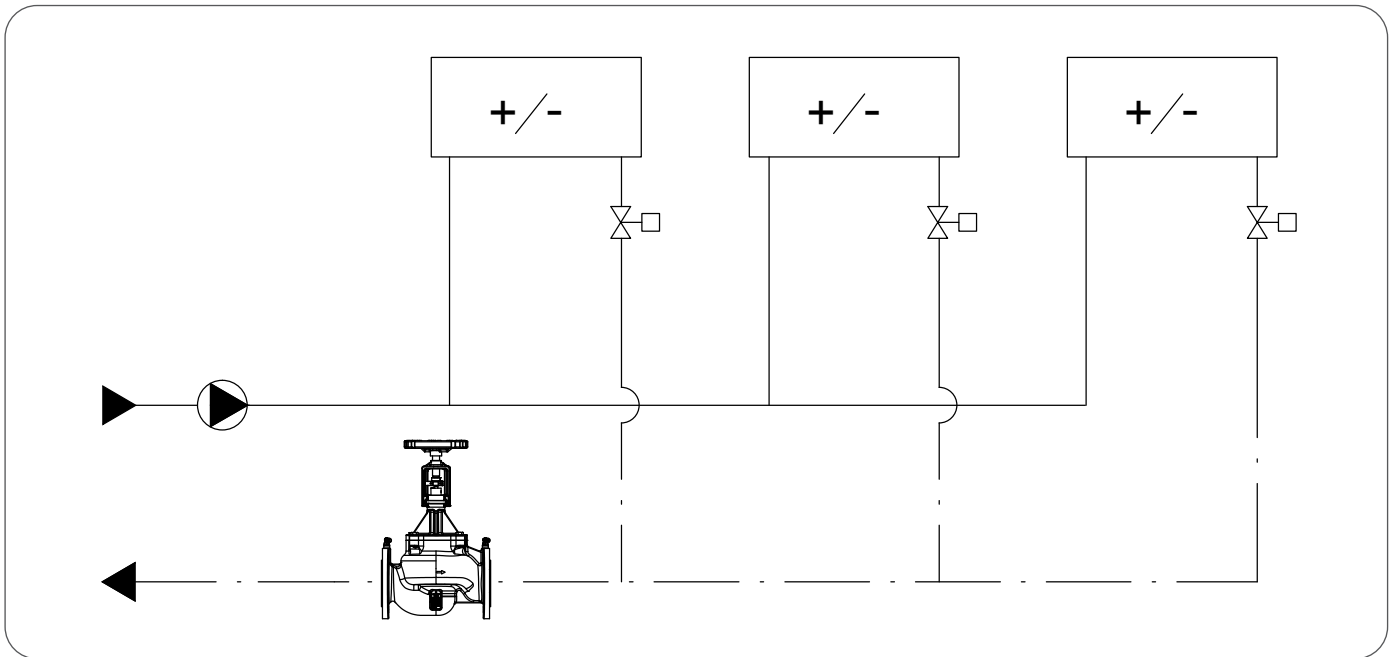
$Q = kV \cdot \sqrt{\Delta p}$	$Q = \text{m}^3/\text{h}$ $\Delta p = \text{Bar}$
$Q = kV \cdot 100 \cdot \sqrt{\Delta p}$	$Q = \text{l/h}$ $\Delta p = \text{kPa}$
$Q = \frac{kV}{36} \cdot \sqrt{\Delta p}$	$Q = \text{l/s}$ $\Delta p = \text{kPa}$

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Application Diagrams | SIGMA Compact installed in a circuit with heating or cooling coils

The system is easily balanced by adjusting the pump according to the required differential pressure across the dynamic balancing valve located at the furthest point from the pump, known as the critical valve (P+ - P-).

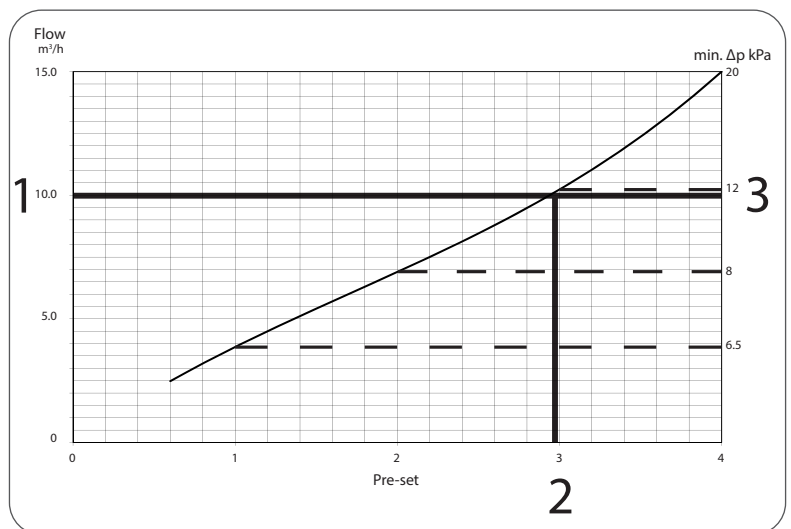
When the minimum required differential pressure is available at the critical valve, sufficient differential pressure will be available in the rest of the system and the system will be automatically balanced.



Flow rate example | SIGMA Compact DN50 Low

Required design flow rate 10 m³/h - (2.78 l/s)

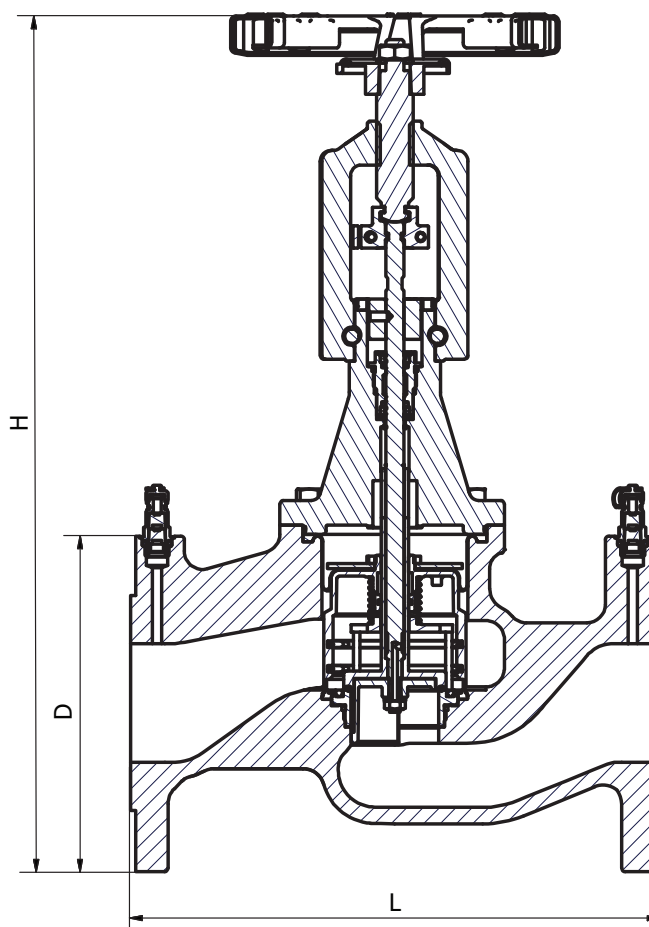
1. The required design flow rate is used as the point of reference for the overall rating of dynamic systems. (See the graph)
2. The pre-setting for the valve can be determined using the flow rate graph or the Frese APP. Setting = 2.9
3. On the right axis, the minimum differential pressure required from the pump can be determined. Minimum DP required approx. 12 kPa.



SIGMA Compact DN50-DN300

Technical Data DN50 - DN80

Valve housing:	GJL-250/GJS-400
Valve cover:	GJS-400
DN50 Ultra:	DZR brass CW602N
DP controller:	Stainless steel/PPS
Spring:	Stainless steel
Diaphragm:	Reinforced EPDM/HNBR
O-rings:	EPDM
Pressure class:	PN16/25
Flange connections:	ISO 7005-2 / EN 1092-2
Max. differential pressure:	800 kPa
Needles for DP measurement:	Max diameter, $\varnothing 3.2$ mm Length, 25 - 40 mm
Medium temperature range:	-10°C to 120°C
Hand wheel:	Steel
Hand wheel spindle:	Stainless steel
Yoke:	Zinc alloy EN 1774



The pipe system shall be properly ventilated to avoid risk of air pockets. Glycolic mixtures up to 50% are applicable (both ethylene and propylene).

Recommendation: Water treatment to VDI 2035.

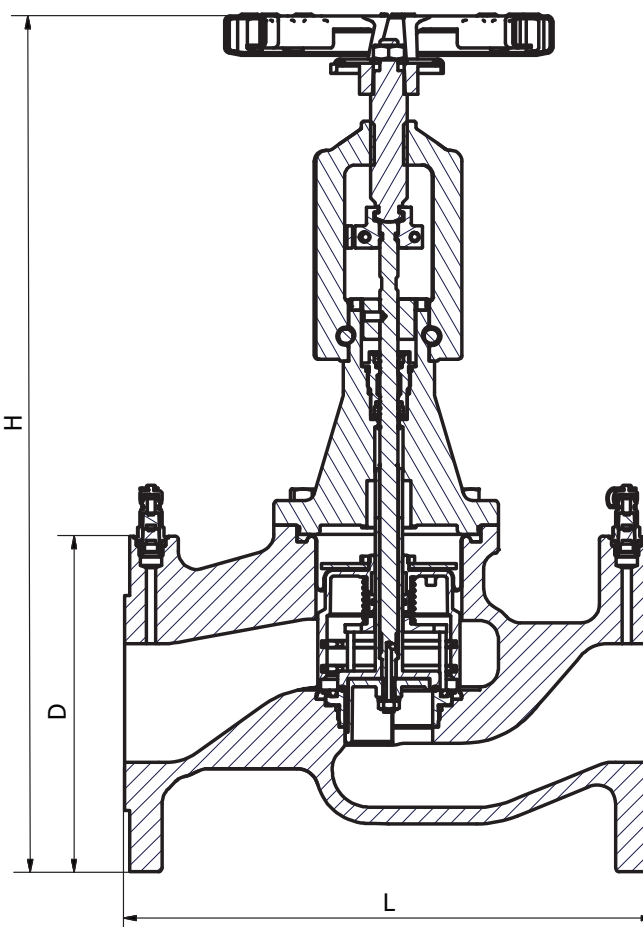
Dimension & Weight · DN50 - DN80

Valve Size		DN50		DN65		DN80	
Series		Ultra	Standard	Ultra	Standard	Ultra	Standard
Dimensions [mm]	L	230		290		310	
	H	351	480	469	497	484	526
	D	165		185		200	
Weight [kg]		12.4	15.4	18.9	20.0	22.2	26.3

SIGMA Compact DN50-DN300

Technical Data DN100 - DN150

Valve housing:	GJL-250/GJS-400
Valve cover:	GJS-400
DP controller:	Stainless steel
Spring:	Stainless steel
Diaphragm:	Reinforced EPDM
O-rings:	EPDM
Pressure class:	PN16/25
Flange connections:	ISO 7005-2 / EN 1092-2
Max. differential pressure:	800 kPa
Needles for DP measurement:	Max diameter, $\varnothing 3.2$ mm Length, 25 - 40 mm
Medium temperature range:	
PN16 - DN100-DN150:	-10°C to 120°C
PN25 - DN100-DN125:	-10°C to 120°C
PN25 - DN150:	-10°C to 110°C
Hand wheel:	Steel
Hand wheel spindle:	Stainless steel
Yoke:	Zinc alloy EN 1774



The pipe system shall be properly ventilated to avoid risk of air pockets. Glycolic mixtures up to 50% are applicable (both ethylene and propylene).
Recommendation: Water treatment to VDI 2035.

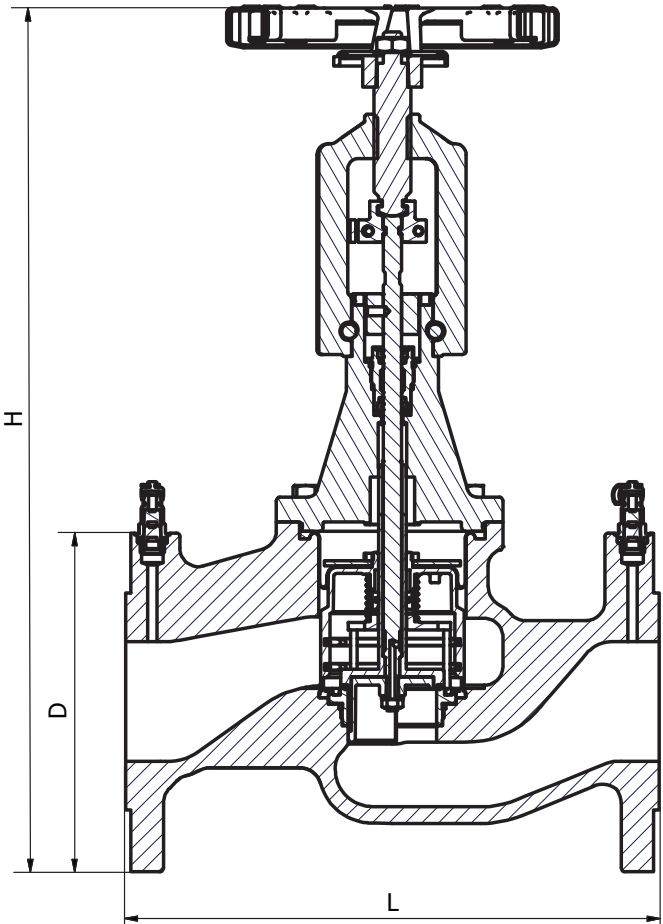
Dimension & Weight · DN100 - DN150

Valve Size		DN100		DN125		DN150
		Ultra	Standard	Ultra	Standard	Standard
Dimensions [mm]	L	350		400		480
	H	523	714	726	761	782
	D	235		270		285
Weight [kg]		35.3	50.2	63.1	71.4	97.8

SIGMA Compact DN50-DN300

Technical Data DN200 - DN300

Valve housing:	GJS-400
Valve cover:	GJS-400
DP controller:	Stainless steel
Spring:	Stainless steel
Diaphragm:	Reinforced EPDM
O-rings:	EPDM
Pressure class:	PN16/25
Flange connections:	ISO 7005-2/EN 1092-2
Max. differential pressure:	800 kPa
Needles for DP measurement:	Max diameter, $\varnothing 3.2$ mm Length, 25 - 40 mm
Medium temperature range:	
PN16 - DN200-DN300:	-10°C to 120°C
PN25 - DN200-DN300:	-10°C to 110°C
Hand wheel	Steel
Hand wheel spindle	Stainless steel
Yoke	Zinc alloy EN 1774



The pipe system shall be properly ventilated to avoid risk of air pockets. Glycolic mixtures up to 50% are applicable (both ethylene and propylene).
Recommendation: Water treatment to VDI 2035.

Dimension & Weight · DN200 - DN300

Valve Size		DN200	DN250	DN300
Series		Standard	Standard	Standard
Dimensions [mm]	L	600	730	850
	H	853	1044	1082
	D	380	444	520
Weight [kg]		175	307	470

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Product programme

Dim.	Series	Type	Flow [m ³ /h]	PN16	PN25
DN50	Ultra	High Flow	1.4 - 11.5	53-5410	53-5430
	Standard	Low Flow	2.5 - 15.0	53-2400	53-2420
		High Flow	3.9 - 24.0	53-2410	53-2430
DN65	Ultra	Low Flow	3.0 - 16.0	53-5401	53-5421
		High Flow	4.2 - 24.0	53-5411	53-5431
	Standard	Low Flow	4.4 - 25.0	53-2401	53-2421
		High Flow	5.9 - 35.0	53-2411	53-2431
DN80	Ultra	Low Flow	4.4 - 25.0	53-5402	53-5422
		High Flow	6.0 - 35.0	53-5412	53-5432
	Standard	Low Flow	5.3 - 34.0	53-2402	53-2422
		High Flow	7.0 - 43.0	53-2412	53-2432
DN100	Ultra	Low Flow	5.3 - 34.0	53-5403	53-5423
		High Flow	7.0 - 43.0	53-5413	53-5433
	Standard	Low Flow	12.1-68.0	53-2403	53-2423
		High Flow	14.8-90.0	53-2413	53-2433
DN125	Ultra	Low Flow	12.1-68.0	53-5404	53-5424
		High Flow	14.8-90.0	53-5414	53-5434
	Standard	Low Flow	18.5-110	53-2404	53-2424
		High Flow	23.0-135	53-2414	53-2434
DN150	Standard	Low Flow	25.6-148	53-2405	53-2425
		High Flow	32.0-195	53-2415	53-2435
DN200	Standard	Low Flow	95.0 - 210	53-2406	53-2426
		High Flow	130 - 280	53-2416	53-2436
DN250	Standard	Low Flow	190 - 475	53-2407	53-2427
		High Flow	245 - 600	53-2417	53-2437
DN300	Standard	Low Flow	190 - 475	53-2408	53-2428
		High Flow	245 - 600	53-2418	53-2438

The valve can be ordered with a protective coating in C5 standard. The product will have the item code extension - **ST01**.
 Example: SIGMA Compact DN65 Standard PN16 Low Flow with C5 coating has item code **53-2401-ST01**

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Setting and Flow

Series	Ultra			
Dim.	DN50 HF			
Pre-set	Flow m ³ /h	Flow l/s	Flow gpm	Min.Δp kPa
0.6	1.40	0.389	6.16	10
0.8	1.71	0.474	7.52	11
1.0	2.05	0.569	9.03	11
1.2	2.42	0.673	10.7	11
1.4	2.82	0.783	12.4	11
1.6	3.24	0.900	14.3	12
1.8	3.68	1.02	16.2	12
2.0	4.15	1.15	18.3	13
2.2	4.64	1.29	20.5	14
2.4	5.17	1.44	22.8	16
2.6	5.73	1.59	25.2	17
2.8	6.34	1.76	27.9	20
3.0	7.00	1.94	30.8	22
3.2	7.72	2.15	34.0	25
3.4	8.52	2.37	37.5	28
3.6	9.40	2.61	41.4	30
3.8	10.4	2.89	45.8	33
4.0	11.5	3.19	50.6	36

Series	Standard							
Dim.	DN50 LF				DN50 HF			
Pre-set	Flow m ³ /h	Flow l/s	Flow gpm	Min.Δp kPa	Flow m ³ /h	Flow l/s	Flow gpm	Min.Δp kPa
0.6	2.50	0.689	10.9	7	3.90	1.09	17.3	19
0.8	3.20	0.887	14.1	7	5.10	1.41	22.3	19
1.0	3.90	1.07	17.0	7	6.20	1.71	27.2	19
1.2	4.50	1.25	19.8	7	7.20	2.00	31.8	19
1.4	5.10	1.42	22.5	7	8.20	2.29	36.2	19
1.6	5.70	1.59	25.1	7	9.20	2.56	40.6	20
1.8	6.30	1.75	27.7	8	10.2	2.83	44.9	20
2.0	6.90	1.92	30.4	8	11.2	3.11	49.2	21
2.2	7.50	2.08	33.0	9	12.2	3.39	53.7	22
2.4	8.10	2.26	35.8	9	13.2	3.67	58.2	24
2.6	8.80	2.44	38.7	10	14.3	3.97	62.9	25
2.8	9.50	2.64	41.8	11	15.4	4.28	67.9	27
3.0	10.2	2.84	45.0	12	16.6	4.61	73.1	30
3.2	11.0	3.07	48.6	13	17.9	4.97	78.7	33
3.4	11.9	3.31	52.4	15	19.2	5.35	84.7	36
3.6	12.8	3.57	56.6	16	20.7	5.75	91.2	40
3.8	13.9	3.86	61.1	18	22.3	6.19	98.1	45
4.0	15.0	4.17	66.0	20	24.0	6.67	106	49

Series	Ultra							
Dim.	DN65 LF				DN65 HF			
Pre-set	Flow m ³ /h	Flow l/s	Flow gpm	Min.Δp kPa	Flow m ³ /h	Flow l/s	Flow gpm	Min.Δp kPa
0.6	3.00	0.833	13.2	10	4.20	1.17	18.5	19
0.8	3.80	1.06	16.7	10	5.48	1.52	24.1	19
1.0	4.50	1.25	19.8	10	6.60	1.83	29.1	19
1.2	5.13	1.43	22.6	10	7.60	2.11	33.5	19
1.4	5.73	1.59	25.2	10	8.53	2.37	37.6	19
1.6	6.31	1.75	27.8	11	9.42	2.62	41.5	20
1.8	6.89	1.92	30.4	11	10.3	2.86	45.4	20
2.0	7.50	2.08	33.0	11	11.2	3.11	49.3	20
2.2	8.14	2.26	35.8	11	12.1	3.37	53.4	20
2.4	8.83	2.45	38.9	11	13.1	3.65	57.8	21
2.6	9.56	2.66	42.1	11	14.2	3.95	62.5	22
2.8	10.4	2.88	45.6	12	15.4	4.27	67.6	23
3.0	11.2	3.11	49.3	12	16.6	4.61	73.1	24
3.2	12.1	3.36	53.3	13	17.9	4.98	78.9	26
3.4	13.0	3.62	57.4	13	19.3	5.37	85.2	29
3.6	14.0	3.89	61.7	15	20.8	5.79	91.7	32
3.8	15.0	4.17	66.1	17	22.4	6.22	98.6	37
4.0	16.0	4.44	70.4	19	24.0	6.67	106	43

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Setting and Flow

Series		Standard							
Dim.	DN65 LF				DN65 HF				
Pre-set	Flow m ³ /h	Flow l/s	Flow gpm	Min.Δp kPa	Flow m ³ /h	Flow l/s	Flow gpm	Min.Δp kPa	
0.6	4.40	1.22	19.3	15	6.00	1.65	26.2	30	
0.8	5.60	1.54	24.5	15	7.60	2.11	33.4	30	
1.0	6.60	1.85	29.3	15	9.10	2.53	40.1	30	
1.2	7.70	2.13	33.7	16	10.5	2.93	46.4	31	
1.4	8.60	2.40	38.0	17	11.9	3.31	52.5	32	
1.6	9.60	2.66	42.2	17	13.3	3.69	58.5	32	
1.8	10.5	2.93	46.4	18	14.7	4.07	64.5	32	
2.0	11.5	3.20	50.6	18	16.0	4.46	70.7	32	
2.2	12.5	3.47	55.0	18	17.5	4.86	77.0	32	
2.4	13.5	3.76	59.6	19	19.0	5.28	83.6	32	
2.6	14.7	4.07	64.5	19	20.6	5.72	90.6	33	
2.8	15.8	4.40	69.7	19	22.3	6.19	98.1	34	
3.0	17.1	4.75	75.3	20	24.1	6.69	106	35	
3.2	18.5	5.13	81.3	21	26.0	7.22	114	37	
3.4	19.9	5.54	87.8	21	28.0	7.79	123	40	
3.6	21.5	5.98	94.7	22	30.2	8.40	133	44	
3.8	23.2	6.45	102	24	32.5	9.04	143	49	
4.0	25.0	6.95	110	25	35.0	9.72	154	55	

Series		Ultra							
Dim.	DN80 LF				DN80 HF				
Pre-set	Flow m ³ /h	Flow l/s	Flow gpm	Min.Δp kPa	Flow m ³ /h	Flow l/s	Flow gpm	Min.Δp kPa	
0.6	4.40	1.22	19.4	15	6.00	1.67	26.4	27	
0.8	5.53	1.54	24.4	15	7.61	2.11	33.5	27	
1.0	6.60	1.83	29.1	15	9.10	2.53	40.1	27	
1.2	7.61	2.12	33.5	15	10.5	2.92	46.3	27	
1.4	8.60	2.39	37.8	16	11.9	3.30	52.3	27	
1.6	9.56	2.66	42.1	17	13.2	3.68	58.3	27	
1.8	10.5	2.92	46.3	17	14.6	4.06	64.3	27	
2.0	11.5	3.19	50.6	18	16.0	4.44	70.4	27	
2.2	12.5	3.47	55.1	19	17.4	4.85	76.8	27	
2.4	13.6	3.77	59.7	19	19.0	5.27	83.5	28	
2.6	14.7	4.07	64.6	19	20.6	5.72	90.6	29	
2.8	15.8	4.40	69.7	20	22.3	6.19	98.1	30	
3.0	17.1	4.75	75.3	20	24.1	6.69	106	32	
3.2	18.5	5.13	81.2	20	26.0	7.23	115	35	
3.4	19.9	5.53	87.7	21	28.1	7.80	124	38	
3.6	21.5	5.97	94.6	22	30.3	8.41	133	42	
3.8	23.2	6.44	102	23	32.6	9.05	143	48	
4.0	25.0	6.94	110	25	35.0	9.72	154	55	

Series		Standard							
Dim.	DN80 LF				DN80 HF				
Pre-set	Flow m ³ /h	Flow l/s	Flow gpm	Min.Δp kPa	Flow m ³ /h	Flow l/s	Flow gpm	Min.Δp kPa	
0.6	5.30	1.48	23.5	16	7.00	1.95	30.9	23	
0.8	6.90	1.91	30.2	16	9.00	2.51	39.8	23	
1.0	8.30	2.30	36.5	16	11.0	3.04	48.2	23	
1.2	9.60	2.68	42.4	17	12.8	3.55	56.2	24	
1.4	10.9	3.04	48.2	17	14.5	4.03	63.9	24	
1.6	12.2	3.40	53.8	17	16.2	4.51	71.5	24	
1.8	13.5	3.75	59.5	18	18.0	4.98	79.0	25	
2.0	14.8	4.11	65.2	18	19.6	5.46	86.5	25	
2.2	16.2	4.49	71.1	18	21.4	5.94	94.2	25	
2.4	17.6	4.88	77.3	19	23.2	6.45	102	26	
2.6	19.1	5.30	83.9	19	25.1	6.97	111	27	
2.8	20.7	5.74	91.0	19	27.1	7.53	119	28	
3.0	22.4	6.23	98.7	20	29.3	8.13	129	30	
3.2	24.3	6.76	107	21	31.6	8.78	139	33	
3.4	26.4	7.34	116	21	34.1	9.47	150	36	
3.6	28.7	7.98	126	22	36.8	10.2	162	40	
3.8	31.2	8.68	138	24	39.8	11.1	175	44	
4.0	34.0	9.45	150	25	43.0	12.0	189	50	

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Setting and Flow

Series		Ultra							
Dim.	DN100 LF				DN100 HF				
Pre-set	Flow m ³ /h	Flow l/s	Flow gpm	Min.Δp kPa	Flow m ³ /h	Flow l/s	Flow gpm	Min.Δp kPa	
0.6	5.30	1.47	23.3	13	7.00	1.94	30.8	20	
0.8	6.86	1.90	30.2	15	9.08	2.52	40.0	20	
1.0	8.30	2.31	36.5	16	11.0	3.06	48.4	21	
1.2	9.66	2.68	42.5	17	12.8	3.56	56.4	21	
1.4	11.0	3.05	48.3	17	14.5	4.04	64.0	22	
1.6	12.2	3.40	53.9	18	16.2	4.51	71.5	22	
1.8	13.5	3.75	59.5	18	17.9	4.97	78.8	22	
2.0	14.8	4.11	65.2	18	19.6	5.44	86.3	22	
2.2	16.1	4.48	71.0	18	21.3	5.93	94.0	22	
2.4	17.5	4.87	77.2	18	23.2	6.43	102	22	
2.6	19.0	5.29	83.8	19	25.1	6.97	110	22	
2.8	20.6	5.74	90.9	19	27.1	7.53	119	22	
3.0	22.4	6.22	98.6	20	29.3	8.14	129	22	
3.2	24.3	6.75	107	21	31.6	8.79	139	23	
3.4	26.4	7.34	116	22	34.2	9.49	150	24	
3.6	28.7	7.97	126	23	36.9	10.3	162	26	
3.8	31.2	8.68	138	24	39.8	11.1	175	29	
4.0	34.0	9.44	150	25	43.0	11.9	189	33	

Series		Standard							
Dim.	DN100 LF				DN100 HF				
Pre-set	Flow m ³ /h	Flow l/s	Flow gpm	Min.Δp kPa	Flow m ³ /h	Flow l/s	Flow gpm	Min.Δp kPa	
0.6	12.1	3.37	53.4	19	14.8	4.10	65.0	29	
0.8	15.3	4.25	67.3	20	18.9	5.25	83.2	29	
1.0	18.1	5.04	79.9	20	22.6	6.28	99.5	30	
1.2	20.8	5.76	91.4	20	26.0	7.22	114	31	
1.4	23.2	6.44	102	21	29.1	8.09	128	32	
1.6	25.5	7.08	112	21	32.1	8.92	141	33	
1.8	27.8	7.71	122	22	35.1	9.74	154	34	
2.0	30.0	8.35	132	22	38.1	10.6	168	35	
2.2	32.4	9.00	143	22	41.2	11.4	181	36	
2.4	34.9	9.70	154	23	44.5	12.4	196	38	
2.6	37.6	10.5	166	23	48.2	13.4	212	40	
2.8	40.6	11.3	179	24	52.2	14.5	230	42	
3.0	44.0	12.2	194	25	56.7	15.8	250	45	
3.2	47.7	13.3	210	26	61.9	17.2	272	49	
3.4	51.9	14.4	229	27	67.7	18.8	298	53	
3.6	56.7	15.7	249	29	74.2	20.6	327	59	
3.8	62.0	17.2	273	32	81.7	22.7	360	66	
4.0	68.0	18.9	299	35	90.0	25.0	396	75	

Series		Ultra							
Dim.	DN125 LF				DN125 HF				
Pre-set	Flow m ³ /h	Flow l/s	Flow gpm	Min.Δp kPa	Flow m ³ /h	Flow l/s	Flow gpm	Min.Δp kPa	
0.6	12.1	3.36	53.3	15	14.8	4.11	65.2	22	
0.8	15.3	4.24	67.2	18	18.9	5.25	83.2	22	
1.0	18.1	5.03	79.7	20	22.6	6.28	99.5	22	
1.2	20.7	5.75	91.1	21	26.0	7.22	114	22	
1.4	23.1	6.42	102	22	29.1	8.09	128	22	
1.6	25.4	7.07	112	22	32.2	8.93	142	22	
1.8	27.7	7.70	122	22	35.1	9.75	155	22	
2.0	30.0	8.33	132	22	38.1	10.6	168	22	
2.2	32.4	8.99	143	22	41.2	11.4	181	22	
2.4	34.9	9.69	154	22	44.5	12.4	196	22	
2.6	37.6	10.5	166	23	48.2	13.4	212	23	
2.8	40.6	11.3	179	24	52.2	14.5	230	24	
3.0	44.0	12.2	194	25	56.7	15.7	250	25	
3.2	47.8	13.3	210	27	61.8	17.2	272	27	
3.4	52.0	14.4	229	28	67.6	18.8	298	30	
3.6	56.7	15.8	250	30	74.1	20.6	326	33	
3.8	62.0	17.2	273	33	81.6	22.7	359	38	
4.0	68.0	18.9	299	35	90.0	25.0	396	44	

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Setting and Flow

Series		Standard							
Dim.	DN125 LF				DN125 HF				
Pre-set	Flow m ³ /h	Flow l/s	Flow gpm	Min.Δp kPa	Flow m ³ /h	Flow l/s	Flow gpm	Min.Δp kPa	
0.6	18.5	5.14	81.5	16	23.0	6.39	101	27	
0.8	23.6	6.54	104	16	29.9	8.31	132	27	
1.0	28.5	7.92	125	16	36.5	10.1	161	27	
1.2	33.3	9.26	147	17	42.8	11.9	188	28	
1.4	38.0	10.6	167	17	48.7	13.5	215	28	
1.6	42.6	11.8	188	17	54.5	15.1	240	28	
1.8	47.1	13.1	207	18	60.0	16.7	264	29	
2.0	51.5	14.3	227	18	65.5	18.2	288	29	
2.2	55.9	15.5	246	18	70.9	19.7	312	29	
2.4	60.4	16.8	266	19	76.4	21.2	336	30	
2.6	65.0	18.1	286	19	82.0	22.8	361	31	
2.8	69.8	19.4	308	20	87.8	24.4	387	32	
3.0	75.0	20.8	330	21	94.0	26.1	414	33	
3.2	80.6	22.4	355	22	101	28.0	443	35	
3.4	86.7	24.1	382	24	108	30.0	475	37	
3.6	93.6	26.0	412	26	116	32.2	511	41	
3.8	101	28.1	446	30	125	34.7	550	46	
4.0	110	30.6	484	35	135	37.5	594	53	

Series		Standard							
Dim.	DN150 LF				DN150 HF				
Pre-set	Flow m ³ /h	Flow l/s	Flow gpm	Min.Δp kPa	Flow m ³ /h	Flow l/s	Flow gpm	Min.Δp kPa	
0.6	25.6	7.11	113	21	32.0	8.89	141	33	
0.8	32.6	9.05	143	21	41.3	11.5	182	33	
1.0	39.2	10.9	173	21	50.0	13.9	220	33	
1.2	45.6	12.7	201	21	58.2	16.2	256	33	
1.4	51.8	14.4	228	21	66.0	18.3	291	33	
1.6	58.0	16.1	255	21	73.7	20.5	324	33	
1.8	64.1	17.8	282	21	81.3	22.6	358	33	
2.0	70.4	19.6	310	22	89.0	24.7	392	34	
2.2	76.8	21.3	338	23	96.9	26.9	427	36	
2.4	83.4	23.2	367	25	105	29.2	463	38	
2.6	90.3	25.1	398	27	114	31.6	501	40	
2.8	97.5	27.1	429	28	123	34.2	542	43	
3.0	105	29.2	462	30	133	36.9	586	46	
3.2	113	31.3	497	32	144	39.9	632	49	
3.4	121	33.6	533	33	155	43.1	683	53	
3.6	130	36.0	571	34	167	46.5	737	57	
3.8	139	38.5	610	35	181	50.2	796	61	
4.0	148	41.1	652	35	195	54.2	859	65	

Series		Standard							
Dim.	DN200 LF				DN200 HF				
Pre-set	Flow m ³ /h	Flow l/s	Flow gpm	Min.Δp kPa	Flow m ³ /h	Flow l/s	Flow gpm	Min.Δp kPa	
1.0	95	26.4	418	11	130	36.1	572	31	
1.2	100	27.8	440	12	137	38.1	604	32	
1.4	105	29.3	464	12	145	40.2	638	33	
1.6	112	31.0	491	13	153	42.4	673	35	
1.8	118	32.8	520	15	161	44.8	710	38	
2.0	125	34.7	550	16	170	47.2	748	41	
2.2	132	36.8	583	17	179	49.8	789	45	
2.4	140	38.9	617	19	189	52.4	831	49	
2.6	148	41.1	652	21	199	55.2	875	53	
2.8	156	43.5	689	22	209	58.1	921	57	
3.0	165	45.8	726	24	220	61.1	969	61	
3.2	174	48.3	765	26	231	64.2	1018	65	
3.4	183	50.7	804	27	243	67.4	1069	69	
3.6	192	53.3	844	29	255	70.8	1122	72	
3.8	201	55.8	884	31	267	74.2	1176	75	
4.0	210	58.3	925	32	280	77.8	1233	78	

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Setting and Flow

Series		Standard						
Dim.	DN250 LF				DN250 HF			
Pre-set	Flow m ³ /h	Flow l/s	Flow gpm	Min.Δp kPa	Flow m ³ /h	Flow l/s	Flow gpm	Min.Δp kPa
1.0	190	52.8	837	10	245	68.1	1079	15
1.2	205	57.0	904	10	256	71.2	1129	16
1.4	220	61.0	967	11	270	75.1	1190	17
1.6	233	64.8	1027	12	286	79.6	1261	20
1.8	247	68.5	1086	13	305	84.7	1342	22
2.0	260	72.2	1145	15	325	90.3	1431	25
2.2	274	76.0	1205	17	347	96.4	1528	28
2.4	288	80.1	1269	19	371	103	1632	32
2.6	304	84.4	1338	21	396	110	1743	36
2.8	321	89.2	1413	23	422	117	1860	40
3.0	340	94.4	1497	25	450	125	1981	45
3.2	361	100	1590	27	479	133	2107	50
3.4	385	107	1695	29	508	141	2237	55
3.6	412	114	1812	31	538	150	2370	60
3.8	441	123	1944	33	569	158	2505	65
4.0	475	132	2091	35	600	167	2642	70

Series		Standard						
Dim.	DN300 LF				DN300 HF			
Pre-set	Flow m ³ /h	Flow l/s	Flow gpm	Min.Δp kPa	Flow m ³ /h	Flow l/s	Flow gpm	Min.Δp kPa
1.0	190	52.8	837	10	245	68.1	1079	15
1.2	205	57.0	904	10	256	71.2	1129	16
1.4	220	61.0	967	11	270	75.1	1190	17
1.6	233	64.8	1027	12	286	79.6	1261	20
1.8	247	68.5	1086	13	305	84.7	1342	22
2.0	260	72.2	1145	15	325	90.3	1431	25
2.2	274	76.0	1205	17	347	96.4	1528	28
2.4	288	80.1	1269	19	371	103	1632	32
2.6	304	84.4	1338	21	396	110	1743	36
2.8	321	89.2	1413	23	422	117	1860	40
3.0	340	94.4	1497	25	450	125	1981	45
3.2	361	100	1590	27	479	133	2107	50
3.4	385	107	1695	29	508	141	2237	55
3.6	412	114	1812	31	538	150	2370	60
3.8	441	123	1944	33	569	158	2505	65
4.0	475	132	2091	35	600	167	2642	70

SIGMA Compact DN50-DN300

Text for technical specifications

The integrated differential pressure control and the flow setting shall be one combined unit

The flow setting control unit shall be pressure independent

The Dynamic Control Valve shall contain a combined flow setting and differential pressure control bonnet assembly

The valve housing shall be GJL-250 or GJS-400

The valve shall have a spring made of stainless steel, a Diaphragm made of Reinforced EPDM/HNBR and O-rings made of EPDM

The valve shall have flange connections according to EN 1092

The valve shall have a maximum operating differential pressure of 800 kPa (8 Bar)

The valve shall have an external adjustable analogue step less presetting scale from minimum to maximum flow

P/T plugs shall be available

The valve shall be capable of closing against a maximum differential pressure of 800 kPa (8 bar) with a leakage rate at maximum 0,01% of max rated volumetric flow and comply to EN1349 Class IV

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